(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 300 789**
**A2**

# (12) EUROPEAN PATENT APPLICATION

(21) Application number: 88306702.7

(22) Date of filing: 21.07.88

(51) Int. Cl.4: A 46 B 11/02

(30) Priority: 23.07.87 US 77140

(43) Date of publication of application:
25.01.89 Bulletin 89/04

(84) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI NL SE

(71) Applicant: UNILEVER PLC
Unilever House Blackfriars P.O. Box 68
London EC4P 4BQ (GB)

(84) Designated Contracting States: GB

(71) Applicant: UNILEVER NV
Burgemeester s'Jacobplein 1 P.O. Box 760
NL-3000 DK Rotterdam (NL)

(84) Designated Contracting States:
BE CH DE ES FR GR IT LI NL SE AT

(72) Inventor: La Rosa, Joseph P.
7 Cherokee Drive
Danbury Connecticut 06811 (US)

Pisa, Gina
665 Warren Avenue
Thornwood New York 10594 (US)

(74) Representative: Rogers, John Edward et al
UNILEVER PLC Patents Division P.O. Box 68 Unilever House
London EC4P 4BQ (GB)

## (54) Liquid filled package having integral sealed application brush.

(57) A liquid filled sampler package containing e.g. an air hardenable liquid is described which comprises an integral, sealed application brush. The package comprises a flexible, generally flat, pouch having an overlapping longitudinal seam and fin-seals at opposite ends containing the liquid to be dispensed from a reservoir contained therein, an outlet at one of the reservoir in airtight fluid communication with one end of a brush having an axial open bore therethrough through which liquid can flow for ultimate application to a surface, and a generally flat cover forming an extension of one of the fin-seals and detachably connected to the pouch to cover and seal the brush from the air.

EP 0 300 789 A2

## Description

### LIQUID FILLED PACKAGE HAVING INTEGRAL, SEALED APPLICATION BRUSH

The present invention relates to a liquid filled dispenser package having an integral, sealed application brush. The package is suitable for use as a disposable sampler package intended to dispense liquid or flowable paste like products such as toothpaste therefrom in a single application and is particularly but not exclusively suitable for containing and dispensing an air hardenable liquid such as nail varnish.

It has been proposed in DE.3122237 to provide a sampler package for e.g. nail varnish having a substantially rectangular base part having a deep drawn zone forming the reservoir for the contents, the deep drawn zone connecting with a second narrower and shallower zone in which a brush is located, the brush having a hollow stem located in the second zone, a line of weakness in the second zone at the junction of the bristles of the brush and the stem to enabling the bristles to be uncovered, the entire base part being covered with a cover sealed thereto all round the edges.

The dispenser package of the present invention comprises a pouch having a reservoir section containing the contents to be dispensed, an outlet at one end of the reservoir in airtight fluid communication with one end of a brush having an axial open bore therethrough in which the contents can flow for ultimate application to a surface by that portion of the brush which is remote from the outlet of the reservoir and a cover portion detachably connected to the pouch to cover and seal the brush from the air, characterised in that the pouch comprises a generally flat pillow-shaped reservoir section formed from sheet plastics material having a longitudinal overlapping seam and fin-seals at the two opposite ends.

There is thus provided a single use package which can be used as a sampler package and which can be economically manufactured directly from flat sheet material on high speed production machines in a single manufacturing process. The finished package is less bulky than that hitherto proposed and the absence of longitudinal fin-seals along the length of the pouch makes the package easier to pack and distribute and more attractive to the consumer. Moreover the absence of the longitudinal fin-seals makes the package more convenient to carry e.g. in a consumer's personal handbag.

The package can be formed by a process including manipulating the plastic sheet material around a mandrel. The sheet material can be presented to the mandrel as two sheets, which are overlapped and joined together to form two longitudinal seams but preferably a single sheet of material is employed which is overlapped and joined together with a single longitudinal seam. After having formed a tube in this way the fin-seal is formed at one end of the tube to enclose and retain the brush in position, the reservoir of the pouch is filled and the opposite end of the pouch closed with a second fin-seal.

The cover portion is preferably formed integrally within a fin-seal of the pouch and connected to the pouch by a narrow neck portion communicating with the reservoir outlet and within which the brush is located. A weakening of the connection between the cover portion and the neck portion can be formed by the edges of the cover portion extending substantially normal to the neck portion, the cover being readily detachable from the pouch along a line extending across the neck portion aligned with said edges of the cover portion.

The pouch preferably comprises a heat sealable plastics material, most conveniently a material that can be dielectrically sealed using radio frequency sealing.

The pouch is particularly suitable for use as a sampler package for nail varnish, for which purpose a three layer plastic laminate of ethylene-vinyl acetate, nylon and ethylene-vinyl acetate is both dielectrically sealable and has the necessary barrier properties to minimise solvent permeation.

The present invention will now be further described with reference to the accompanying drawings which form a portion of the present Specification wherein:

Fig.1 is a perspective view showing the sampler package with the brush covered and sealed by the cover;

Fig.2 is a view similar to that of Fig.1 showing the cover removed;

Fig.3 is a cross-sectional view of the article shown in Fig.2 from the side taken along line 3-3; and

Fig.4 is a cross-sectional view of the article shown in Fig.2 taken along line 4-4 in Fig.2 in the direction of the arrows.

Referring to Fig.1 there is shown a liquid filled sampler package according to the present invention which comprises a flexible, generally flat pouch 11 having a generally flattened pillow-shaped reservoir section 12 filled with a suitable liquid or paste like flowable product 12a which may be an air hardenable liquid such as, nail polish, which is to be dispensed from the reservoir. The reservoir 12 has an outlet 13 at one end which is in airtight and fluid communication with one end of a brush 14. The outlet 13 communicates with a bore section 16 disposed in a neck portion 17 formed by a fin-seal at that end of the reservoir. The neck portion 17 narrows in width away from the reservoir to meet a flat cover portion 15, the bore section continuing into the cover portion as shown at 18. One end of the brush is secured in the bore section 16 of the neck portion of the pouch with the bristles extending into the bore 18 of the cover portion. The area of the cover portion 15 surrounding the bore 18 is effectively a continuation of the fin-seal at that end of the reservoir and seals the brush and reservoir from contact with the air. The edges 19 of the cover portion which meet the neck portion 17 extend substantially normal to the neck portion so that the junction between the cover portion and the neck forms a weakening, the cover

being readily detachable along a line extending across the neck portion aligned with those edges of the cover portion.

The opposite end of the pouch is also sealed with a fin-seal 20.

As shown in best detail in Fig.4, the brush 14 comprises a peripheral bristle section 14a and an axial open section 14b inside the bristle section which allows for the contents 12a to pass through the centre of the brush until it reaches the outer end of the brush which is remote from the point of attachment of the brush to the pouch 11. This internal travel of the contents within an open bore in the brush aids in insulating the contents from contact with air until the material is applied which can be important if the content is an air hardenable liquid.

A brush of the type described above can be formed by using various procedures. One is to insert a pin-like instrument into a bundle of bristles which are then heated to fuse the bristles together around the pin which is then removed. A second means for forming such a brush is to bond the bristles to a permanent sleeve or holder for the bristles with the sleeve or holder forming the conduit for the air hardenable liquid to be dispensed through the brush. Another means for forming such a brush is to take a piece of solid tubing and insert it into the bundle of fibres.

The package components comprising pouch 11 and cover 15 are preferably formed of a plastic which can be dielectrically sealed using radio frequency sealing technology known to persons or ordinary skill in the art.

A three layer plastic laminate of ethylene-vinyl acetate, nylon, and ethylene-vinyl acetate is preferred for good barrier properties to cut down on solvent permeability when the product contained in the pouch 11 contains a volatile solvent (such as, nail polish). The pouch 11 and cover 15 are preferably formed from a single plastic sheet which is appropriately manipulated over a mandrel and overlapped and joined to form a longitudinal seam (not shown) to yield the shape shown in the drawings with the heat sealing of the two opposed sides by fin-seals 17 and 20 yielding the structure shown in Fig.1. Alternatively two sheets of plastic material can be used which are overlapped and joined to form two longitudinal seams.

The brush 14 is placed in appropriate communication with the intended outlet opening 13 prior to the ultimate sealing operation and, after the sealing has occurred, the brush lies in the bore sections 16 and 18 extending across a portion of both pouch 11 and cover 15 in sealed relationship from the air. This manufacturing operation can be carried out at high rates of throughput on a form, filling and sealing machine. The finished package is substantially flat and has the minimum of projections which makes it economical to pack and distribute and is convenient for a person to carry.

Once the over 15 has been torn from the pouch, the exposed brush 14 allows a person to appropriately squeeze the reservoir section 12 of the pouch 11 to dispense the product 12a from the pouch 11 through opening 13 and channel 16 holding the brush 14. The contents thus flow into the brush and can be applied therewith as required. Thus the package is suitable for containing and dispensing e.g. nail polish or, if necessary with a different shaped brush, a toothpaste.

## Claims

1. A filled dispenser package with an integral sealed applicator brush comprising a pouch (11) having a reservoir section (12) containing the contents (12a) to be dispensed, an outlet (13) at one end of the reservoir in airtight fluid communication with one end of a brush (14) having an axial open bore (14b) therethrough in which the contents (12a) can flow for ultimate application to a surface by that portion of the brush (14) which is remote from the outlet (13) of the reservoir (12) and a cover portion (15) detachably connected to the pouch (11) to cover and seal the brush (14) from the air, characterised in that the pouch (11) comprises a generally flat pillow-shaped reservoir section (12) formed from sheet plastics material having a longitudinal overlapping seam and fin-seals (17, 20) at the two opposite ends.

2. A package according to Claim 1 characterised in that the pouch is formed from a single sheet of plastics material and has a single longitudinal overlapping seam.

3. A package according to Claim 1 or Claim 2 characterised in that the cover portion (15) is detachably connected to the pouch by a narrow neck portion (17), the cover portion (15) being detachable from the pouch along a line extending across neck portion aligned with edges (19) of the cover portion extending substantially normal to the neck portion.

4. A package according to any of the preceding claims characterised in that the pouch comprises a heat sealable plastics material.

5. A package according to any of the preceding claims characterised in that it is filled with nail polish.

Fig.1.

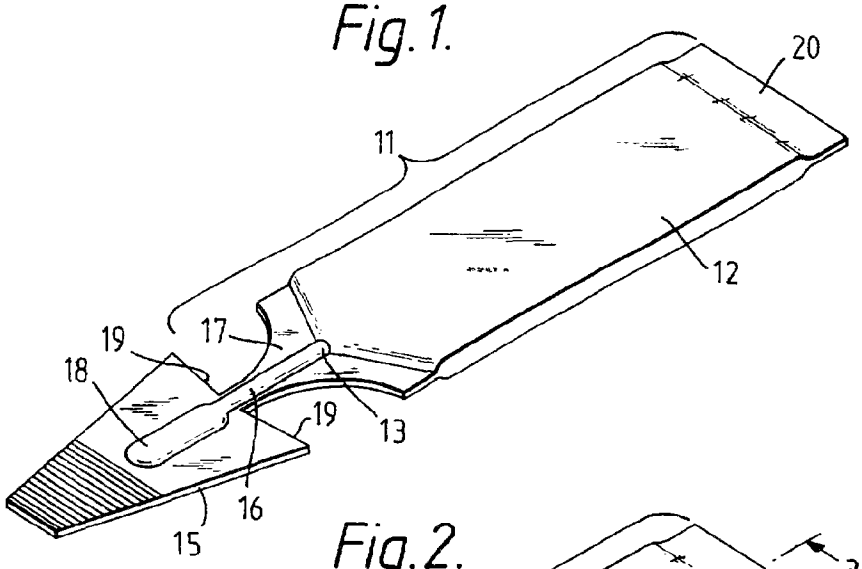


Fig.2.

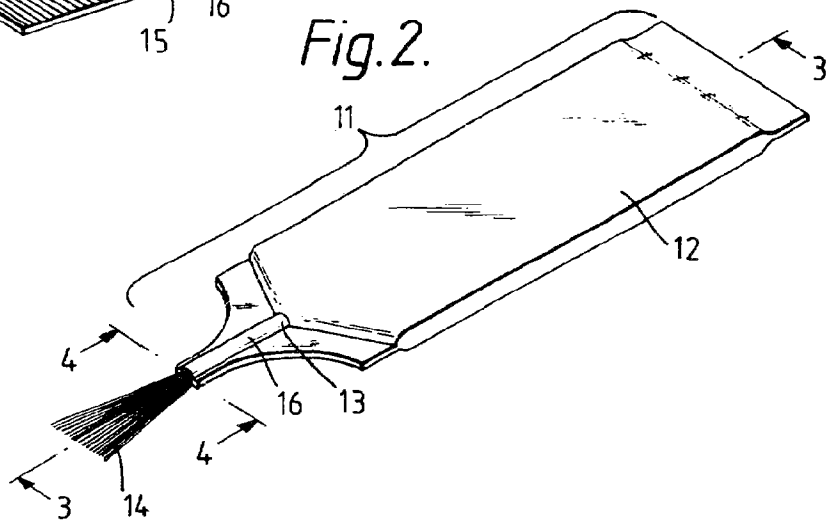


Fig.3.

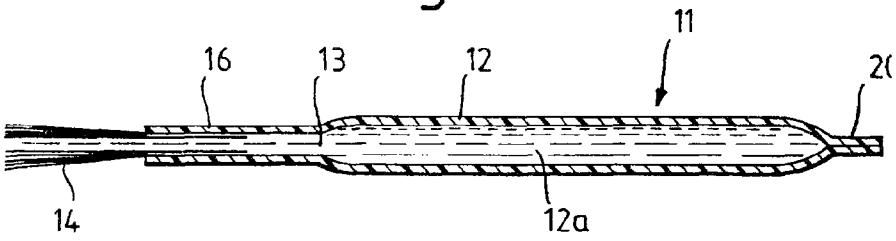


Fig.4.